GCSE HIGHER · REVISION MAT 4

Relative frequency and expected outcomes

1 P(blue) = 0.25.

A counter is picked 160 times with replacement.

How many blues would you expect?

2 48 of 200 seeds did not grow.

Find the relative frequency of a seed growing.

3 Explain why a fair dice could land on 6 five times in a row.

4 P(an insurance claim) = 0.04 per customer each year.

There are 2500 customers.

The average claim is £800.

Find the expected total of claims.

5 The colours of 50 cars were recorded.

Colour	Black	White	Silver	Red
Frequency	14	11	15	10

Show that the relative frequency of silver is 0.3.

6 The colours of 50 cars were recorded.

Colour	Black	White	Silver	Red
Frequency	14	11	15	10

Estimate the number of red cars among 1200 cars.

7 Explain why you cannot work out a theoretical probability for a drawing pin landing point up.

8 P(win) on a scratch card is $\frac{1}{8}$.

Each card costs £2 and the prize is £10.

Find a player's expected loss on 100 cards.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 4

Relative frequency and expected outcomes

1 **40**

2 $\frac{152}{200}$

0.76

3 **Each roll is independent; unlikely sequences can still happen.**

4 Expected claims: 100

£80 000

5 $\frac{15}{50} = 0.3$

6 $\frac{10}{50} \times 1200$

240

7 **The outcomes are not equally likely, so you must experiment.**

8 Expected wins 12.5, worth £125

Cost £200

£75

Mr&Mrs MATHS